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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/015,575   | 12/17/2001  | Gary J. Puppa        | 53921/189           | 6259             |
| 27871  | 7590        | 10/18/2005           | EXAMINER            |                  |
| BLAKE, CASSELS & GRAYDON LLP<br>BOX 25, COMMERCE COURT WEST<br>199 BAY STREET, SUITE 2800<br>TORONTO, ON M5L 1A9<br>CANADA |             |                      | NG, CHRISTINE Y     |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 2663                |                  |

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                     |  |
|------------------------------|--------------------------------------|-------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/015,575 | <b>Applicant(s)</b><br>PUPPA ET AL. |  |
|                              | <b>Examiner</b><br>Christine Ng      | <b>Art Unit</b><br>2663             |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 13-19 are objected to because of the following informalities:

- a) Claims 13-19 should be renumbered as claims 10-16.
- b) In claim 13 line 1, "12" should be changed to --9--.
- c) In claim 14 line 1, "13" should be changed to --10--.
- d) In claim 15 line 1, "14" should be changed to --11--.
- e) In claim 16 line 1, "15" should be changed to --12--.
- f) In claim 17 line 1, "16" should be changed to --13--.
- g) In claim 18 line 1, "17" should be changed to --14--.
- h) In claim 19 line 1, "14" should be changed to --11--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 7 and 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "said number of connectivity verification cells" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim 9 recites the limitation "said fault" in line 10. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 2, 9, 13 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,775,239 to Akita et al.

Referring to claim 1, Akita et al disclose in Figure 6 a method of notifying a first communication network (MPLS network) of a fault related to a second communication network (ATM network), said first communication network connected to said second communication network (by MPLS router 80 and ATM switch 90), said first communication network having a first OAM protocol (OAM functions performed by central-processing apparatus 81) adapted to monitor integrity of said first communication network, said second communication network having a second OAM protocol (OAM functions performed by central-processing apparatus 91) adapted to monitor integrity of said second communication network. Refer to Abstract and Column 3, line 64 to Column 4, line 18. The method comprises:

Detecting said fault related to said second communication network. Faults and anomalies between MPLS router 80 and ATM switch 90 are detected during a test procedure involving a test-start message (Figure 7, steps S18-S38), an OAM loop back

cell test (Figure 7, steps S40-S44), and a test-completion message (Figure 7, steps S46-S68). Refer to Column 6, lines 50 to Column 8, line 62.

Generating (Figure 7, step S70) a first OAM cell of said first OAM protocol indicating detection of said fault. At step S70, the communication-path-data-check-control-unit 130 (part of the central-processing apparatus 81) generates tests results based on the results of the cell-transparency check, the results of connection check, etc. Refer to Column 8, line 63 to Column 9, line 1. Although Akita et al do not specifically disclose that the first cell is an OAM cell, it contains the test results of the OAM loop-back cell test, so it reads on an "OAM cell". Refer to Column 8, lines 7-15.

Transmitting (Figure 7, step S70) said first OAM cell to said first communication network to indicate said fault to said first communication network. The communication-path-data-check-control-unit 130 then sends the test results to the IP-packet communication-control unit 83, which then forwards the test results to the maintenance terminal 70 (part of the MPLS network). Refer to Column 9, lines 1-4.

Referring to claim 2, Akita et al disclose in Figure 6 that said first communication network (MPLS network) is connected with said second communication network (ATM network) at a network element (MPLS router 80 and ATM switch 90). Refer to Abstract and Column 3, lines 55-67.

Referring to claim 9, Akita et al disclose in Figure 6 a network element (MPLS router 80 and ATM switch 90) for connecting a first communication network (ATM network) to a second communication network (MPLS network), said first communication network having a first communication protocol (ATM) and a first OAM protocol (OAM

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functions performed by central-processing apparatus 91) for use in monitoring integrity of said first communication network, said second communication network having a second communication protocol (MPLS) and a second OAM protocol (OAM functions performed by central-processing apparatus 81) for use in monitoring integrity of said second communication network. Refer to Abstract and Column 3, line 64 to Column 4, line 18. The network element comprises:

A first section (ATM switch 90) adapted to:

Provide communications for said network element with said first communication network. Refer to Column 4, lines 11-18.

Notify said network element of said fault in said first communication network.

Said first section detecting said faults related to said first communication network. Faults and anomalies between MPLS router 80 and ATM switch 90 are detected during a test procedure involving a test-start message (Figure 7, steps S18-S38), an OAM loop back cell test (Figure 7, steps S40-S44), and a test-completion message (Figure 7, steps S46-S68). Refer to Column 6, lines 50 to Column 8, line 62.

A second section (MPLS router 80) adapted to:

Provide communications for said network element with said communication network. Refer to Column 4, lines 1-10.

Detect that said first section has notified said network element of said fault. At step S70, the communication-path-data-check-control-unit 130 (part of the MPLS router 80) generates tests results based on the results of the cell-transparency check, the results of connection check, etc. Refer to Column 8, line 63 to Column 9, line 1.

Notify (Figure 7, step S70) said second communication network of said fault. The communication-path-data-check-control-unit 130 then sends the test results to the IP-packet communication-control unit 83, which then forwards the test results to the maintenance terminal 70 (part of the MPLS network). Refer to Column 9, lines 1-4.

Referring to claim 13, Akita et al disclose in Figure 6 that the first communication network is a MPLS network, said first OAM protocol is a MPLS OAM protocol, said second communication network is an ATM network and said second OAM protocol is an ATM OAM protocol. Refer to the rejection of claim 9.

Referring to claim 14, Akita et al disclose in Figure 6 that said fault related to said first communication network is detected by said first section (ATM switch 90) after receiving an OAM cell of said first OAM protocol. Refer to Column 8, lines 7-15.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,239 to Akita et al.

Referring to claim 3, Akita et al disclose that said *second* communication network is an ATM network, said *second* OAM protocol is an ATM OAM protocol, said *first* communication network is a MPLS network and said *first* OAM protocol is a MPLS OAM protocol.

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Akita et al do not disclose that said first communication network is an ATM network, said first OAM protocol is an ATM OAM protocol, said second communication network is a MPLS network and said second OAM protocol is a MPLS OAM protocol.

However, since a fault relating to the ATM network can be detected and indicated to the MPLS network, a fault relating to the MPLS network can also be detected and indicated to the ATM network. The invention can be modified to work both ways. Therefore, it would have obvious to one of ordinary skill in the art at the time the invention was made to include that said first communication network is an ATM network, said first OAM protocol is an ATM OAM protocol, said second communication network is a MPLS network and said second OAM protocol is a MPLS OAM protocol, the motivation being that in order to notify the ATM network of faults occurring in the MPLS network.

Referring to claim 4, Akita et al disclose in Figure 6 that said detecting said fault occurs at said network element (MPLS router 80 and ATM switch 90). The testing procedure is conducted using elements within MPLS router 80 and ATM switch 90. Refer to Column 6, lines 50 to Column 8, line 62.

Referring to claim 5, Akita et al disclose in Figure 6 that said network element (MPLS router 80 and ATM switch 90) is adapted to receive connectivity verification cells (returned OAM cells) from said second communication network (ATM network). Refer to Column 8, lines 7-15.



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8. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,239 to Akita et al in view of U.S. Patent No. 6,636,484 to Agrawal et al.

Akita et al do not disclose that [claim 6] said fault related to said second communication network is detected at said network element by recognition of expiry of a time interval in which a number of connectivity verification cells have not been received and that [claim 7] said number of connectivity verification cells is at least three.

Agrawal et al disclose in Figure 2 switches 250a and 250b exchanging OAM loopback cells. If neither switch receives a returned loopback cell within a predetermined period of time, a second loopback cell is transmitted. If the second loopback cell is not received back within the predetermined period of time, a third loopback cell is transmitted. The switches continue this process until 10 loopback cells have been transmitted. If none of the loopback cells are received back at the switch after ten loopback cells have been transmitted, a path failure is declared. A path failure is detected upon expiry of a time interval (ten predetermined time intervals) in which a number of connectivity verification cells (10 OAM loopback cells) have not been received, wherein the number of cells is at least three (10). Refer to Column 7, lines 17-61. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that said fault related to said second communication network is detected at said network element by recognition of expiry of a time interval in which a number of connectivity verification cells have not been received and that said number of connectivity verification cells is at least three. One would be motivated to do

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so in order to utilize the rate transfer of OAM cells between two nodes to determine the status of the paths.

9. Claims 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,239 to Akita et al in view of U.S. Patent No. 6,424,629 to Rubino et al.

Akita et al do not disclose that said first OAM cell is an ATM AIS cell.

Rubino et al disclose in Figure 3 that the ATM switch 106 monitors the status of the PVC 110 and when there is a PVC failure 112, the ATM switch transmits an Alarm Indication Signal (AIS) 114 to the local ATM router 102. The ATM switch 106 periodically and continuously transmits the AIS 114 until the PVC failure has been resolved. Refer to Column 5, line 53 to Column 6, line 57. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that said first OAM cell is an ATM AIS cell, the motivation being that an ATM AIS cell is used in the conventional alarm surveillance mechanism to notify ATM routers of path failures.

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,239 to Akita et al in view of U.S. Patent No. 6,810,046 to Abbas et al.

Referring to claim 15, Akita et al do not disclose that said OAM cell is a FDI cell.

Abbas et al disclose that a forward defect indicator (FDI) can be used between transmitters and receivers to indicate downstream that a defect condition has been detected upstream. Refer to Column 9, lines 35-39; Column 15, lines 14-28; and

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Column 16, lines 57-67. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that said OAM cell is a FDI cell, the motivation being in order to indicate that the transmit path is defective.

Referring to claim 16, Akita et al disclose in Figure 6 that said first section (ATM switch 90) is further adapted to periodically transmit connectivity verification cells (OAM cells) to said first communication network (ATM network). Refer to Column 8, lines 7-15.

11. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,775,239 to Akita et al in view of U.S. Patent No. 6,810,046 to Abbas et al, and in further view of U.S. Patent No. 6,636,484 to Agrawal et al. Refer to the rejection of claims 6 and 7.


### ***Conclusion***

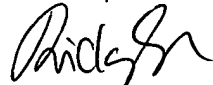
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng   
October 7, 2005

  
RICKY NGO  
PRIMARY EXAMINER  
SPE, AU 2663